

Appendix A—Full Results

Experiment 1 Spanish-only Sentences

Experiment 1a: Spanish Monolingual Group

Feminine gender trials. For the feminine same gender trials (i.e. trials in which both target and distractor items are feminine), participants showed no significant differences between looks to target or distractor items through the 500 ms time window (Region 100, $t(23) = 0.621$, $p = 0.541$; Region 200 $t(23) = -0.043$, $p = 0.966$; Region 300, $t(23) = -0.722$, $p = 0.478$; Region 400, $t(23) = -0.166$, $p = 0.87$; Region 500, $t(23) = 0.668$, $p = 0.511$). Participants first exhibit significant increased looks to target items in Region 600, mean difference = 0.245 ($t(23) = 3.918$, $p < 0.001$). Throughout the remainder of the time course analysis, participants increasingly and significantly looked more towards target items (Region 700, mean difference = 0.534, $t(23) = 10.32$, $p < 0.001$; Region 800, mean difference = 0.737, $t(23) = 17.766$, $p < 0.001$).

For the feminine different gender trials, where the target is feminine but the distractor is masculine, participants revealed significantly more looks to distractor items at article onset, Region 100 mean difference = -0.152 ($t(23) = -2.553$, $p = 0.018$), indicating the likely presence of a baseline effect. However, this baseline effect disappears in the subsequent two time regions, where no difference is found between fixations to target and distractor items (Region 200, $t(23) = -1.558$, $p = 0.133$; Region 300, $t(23) = -0.208$, $p = 0.837$). Participants first show a higher proportion of fixations to target items in Region 400, mean difference = 0.134 ($t(23) = 2.56$, $p = 0.018$). This effect continues throughout the remainder of the time course, increasing in each time region (Region 500 mean difference = 0.296, $t(23) = 5.694$, $p < 0.001$; Region 600 mean difference = 0.438, $t(23) = 8.512$, $p < 0.001$; Region 700 mean difference = 0.606, $t(23) = 12.912$, $p < 0.001$; Region 800 mean difference = 0.736, $t(23) = 15.93$, $p < 0.001$).

Masculine Gender Trials. In the masculine same gender trials, both target and distractor items are masculine. As with feminine same gender trials, participants did not show significant differences between looks to target and distractor items during the first 500 ms time regions (Region 100, $t(23) = 1.087$, $p = 0.288$; Region 200, $t(23) = 1.537$, $p = 0.138$; Region 300, $t(23) = 1.436$, $p = 0.164$; Region 400, $t(23) = 1.409$, $p = 0.172$; Region 500, $t(23) = 1.494$, $p = 0.149$). Participants first reveal significantly more fixations to target items in Region 600, mean difference = 0.281 ($t(23) = 4.875$, $p < 0.001$). Participants increasingly converge on looks to target items in the subsequent two time regions (Region 700, mean difference = 0.593, $t(23) = 11.679$, $p < 0.001$; Region 800, mean difference = 0.719, mean difference = 0.719, $t(23) = 15.419$, $p < 0.001$).

For the masculine different gender trials in which participants viewed 2-picture displays where the target item is masculine but the distractor item is feminine, there were no significant differences between fixations to target and distractor items during the first 300 ms time regions (Region 100, $t(23) = -0.646$, $p = 0.525$; Region 200, $t(23) = -0.936$, $p = 0.359$; Region 300 $t(23) = 0.532$, $p = 0.6$). Participants first begin to diverge towards target items in Region 400, mean difference = 0.174 ($t(23) = 3.088$, $p = 0.005$). Significantly increasing looks to target items over distractor items continue through the remaining time regions (Region 500 mean difference = 0.353, $t(23) = 5.729$, $p < 0.001$; Region 600 mean difference = 0.448, $t(23) = 8.762$, $p < 0.001$; Region 700 mean difference = 0.639, $t(23) = 13.541$, $p < 0.001$; Region 800 mean difference = 0.8, $t(23) = 18.562$, $p < 0.001$).

Experiment 1b, Spanish-English Bilingual Group

Feminine Gender Trials. On feminine same gender trials (e.g. *la mesa* “the_{FEM} table_{FEM}”, *la cama* “the_{FEM} bed_{FEM}”), Spanish-English bilinguals showed no difference between looks to target

and distractor items during the first 500 ms time regions (Region 100, $t(24) = 0.228$, $p = 0.821$; Region 200, $t(24) = -0.36$, $p = 0.722$; Region 300, $t(24) = -0.567$, $p = 0.567$; Region 400, $t(24) = 0.179$, $p = 0.86$; Region 500, $t(24) = 0.629$, $p = 0.535$). Participants first exhibit significantly more fixations to target items in Region 600, mean difference = 0.196 ($t(24) = 4.071$, $p < 0.001$). The final two time regions continue to exhibit significantly higher looks to target items (Region 700 mean difference = 0.432, $t(24) = 7.936$, $p < 0.001$; Region 800 mean difference = 0.697, $t(24) = 15.205$, $p < 0.001$).

For feminine different gender trials (e.g. la mesa “the_{FEM} table_{FEM}”, el dinero “the_{MASC} money_{MASC}”), bilinguals show no differences between fixations to target and distractor items during the first 300 ms time regions (Region 100, $t(24) = -0.507$, $p = 0.617$; Region 200, $t(24) = 0.35$, $p = 0.729$; Region 300, $t(24) = 1.404$, $p = 0.173$). In Region 400, bilinguals first begin to exhibit non-significant but marginally higher fixations to target items, mean difference = 0.102 ($t(24) = 1.934$, $p = 0.065$). This effect becomes significant in the following time region, Region 500 mean difference = 0.163 ($t(24) = 3.448$, $p = 0.002$) and continues to be significant with increasingly more looks to target items throughout the remaining time regions (Region 600 mean difference = 0.261, $t(24) = 5.733$, $p < 0.001$; Region 700 mean difference = 0.447, $t(24) = 8.29$, $p < 0.001$; Region 800 mean difference = 0.602, $t(24) = 11.641$, $p < 0.001$).

Masculine Gender Trials. On masculine same gender trials, participants viewed target and distractor items that were both masculine (e.g. el libro “the_{MASC} book_{MASC}”, el dinero “the_{MASC} money_{MASC}”). Bilinguals had non-significant but marginally increased looks to target items in the first 200 ms time regions possibly indicating the presence of baseline effects (Region 100 mean difference = 0.118, $t(24) = 1.87$, $p = 0.074$; Region 200 mean difference = 0.096, $t(24) = 1.725$, $p = 0.097$). However, subsequent regions through 500 ms reveal no differences between looks to

target and distractor items (Region 300, $t(24) = 1.148$, $p = 0.262$; Region 400, $t(24) = 0.267$, $p = 0.792$; Region 500, $t(24) = 0.648$, $p = 0.524$). Bilinguals begin to show significantly more fixations to target items after article offset in the 600 ms time region, mean difference = 0.151 ($t(24) = 2.667$, $p = 0.013$). This effect continues throughout the remaining time regions with increasingly higher looks to target items (Region 700 mean difference = 0.339, $t(24) = 5.801$, $p < 0.001$; Region 800 mean difference = 0.554, $t(24) = 7.447$, $p < 0.001$).

For the masculine different gender trials, where masculine targets were paired with feminine distractors (e.g. el libro “the_{MASC} book_{MASC}”, la cama “the_{FEM} bed_{FEM}”), Spanish-English bilinguals did not exhibit significant differences between looks to target and distractor items in the first 500 ms time regions (Region 100, $t(24) = -0.535$, $p = 0.598$; Region 200, $t(24) = 0.64$, $p = 0.528$; Region 300, $t(24) = 1.595$, $p = 0.124$; Region 400, $t(24) = 1.021$, $p = 0.317$; Region 500, $t(24) = 1.571$, $p = 0.129$). Bilinguals initially show significantly more fixations to target items in Region 600, mean difference = 0.254 ($t(24) = 4.078$, $p < 0.001$). This significant difference continues and increases throughout the remaining two time regions (Region 700 mean difference = 0.466, $t(24) = 8.841$, $p < 0.001$; Region 800 mean difference = 0.626, $t(24) = 14.351$, $p < 0.001$).

Experiment 2, Code-switched Sentences

Experiment 2a, Mixed NPs in Fixed Carrier Phrase

Critical trials. For feminine target items presented with masculine phonological cohorts (e.g. *candle* Sp. vela_{FEM} and *candy* Sp. caramelo_{MASC}), bilinguals did not exhibit a significant difference between looks to target and distractor items through the first 300 ms time regions (Region 100, $t(24) = -0.531$, $p = 0.6$; Region 200, $t(24) = -0.025$, $p = 0.98$; Region 300, $t(24) = 0.959$, $p = 0.347$). In the 400 ms time region, bilinguals begin to show non-significant but marginal

differences with increasing looks to feminine target items, 400 ms time region mean difference = 0.112 ($t(24) = 1.807, p = 0.083$). This difference becomes significant in the 500 ms time region, mean difference = 0.151 ($t(24) = 2.189, p = 0.039$) and is sustained throughout the remainder of the time course, with increasing looks to target items in each subsequent time region (Region 600 mean difference = 0.168, $t(24) = 3.094, p = 0.005$; Region 700 mean difference = 0.158, $t(24) = 2.966, p = 0.007$; Region 800 mean difference = 0.177, $t(24) = 3.157, p = 0.004$; Region 900 mean difference = 0.249, $t(24) = 4.644, p < 0.001$; Region 1000 mean difference = 0.458, $t(24) = 8.85, p < 0.001$).

On masculine target item trials paired with a feminine phonological cohort, no significant differences were found between fixations to target and distractor items through the first 600 ms time regions (Region 100, $t(24) = -0.547, p = 0.589$; Region 200, $t(24) = -0.106, p = 0.917$; Region 300, $t(24) = -0.636, p = 0.531$; Region 400, $t(24) = 0.372, p = 0.713$; Region 500, $t(24) = 0.786, p = 0.44$; Region 600, $t(24) = 0.994, p = 0.33$). Bilinguals show a non-significant but marginal difference with increasing looks to masculine target items in time region 700 ms, mean difference = 0.147 ($t(24) = 1.95, p = 0.0631$). This difference becomes significant in the following time region, Region 800 mean difference = 0.173 ($t(24) = 2.666, p = 0.014$) and continues throughout the remaining time regions with increasingly greater difference between masculine target and feminine cohort items (Region 900 mean difference = 0.284, $t(24) = 4.668, p < 0.001$; Region 1000 mean difference = 0.457, $t(24) = 9.457, p < 0.001$).

Experiment 2b, Intra-sentential Mixed NPs

Critical trials. On the feminine cohort trials, participants saw a feminine target item paired with a masculine distractor that was also a phonological competitor. In the first 400 ms time regions there was no difference between looks to target and distractor items (Region 100,

$t(24) = -0.337, p = 0.739$; Region 200, $t(24) = -0.81, p = 0.426$; Region 300, $t(24) = -1.111, p = 0.278$; Region 400, $t(24) = -1.122, p = 0.273$). In Region 500, there were non-significant but marginally higher looks to the distractor item, mean difference = -0.167 ($t(24) = -2.055, p = 0.051$); however, this effect disappeared in the following time region, Region 600 ($t(24) = -1.424, p = 0.167$). Fixations to feminine target items emerged as significantly higher in Region 700, mean difference = 0.151 ($t(24) = 2.145, p = 0.042$) and is sustained with increasingly more fixations to feminine target items throughout the remainder of the time course (Region 800, mean difference = 0.233, $t(24) = 2.764, p = 0.011$; Region 900, mean difference = 0.356, $t(24) = 4.409, p < 0.001$; Region 1000, mean difference = 0.521, $t(24) = 8.731, p < 0.001$).

For the masculine target items, no significant difference was detected between looks to masculine target and feminine distractor items through the first 800 ms time regions (Region 100, $t(24) = 0.989, p = 0.333$; Region 200, $t(24) = 1.227, p = 0.232$; Region 300, $t(24) = 0.156, p = 0.13$; Region 400, $t(24) = 0.969, p = 0.342$; Region 500, $t(24) = 0.408, p = 0.687$; Region 600, $t(24) = 0.176, p = 0.862$; Region 700, $t(24) = 0.12, p = 0.906$; Region 800, $t(24) = 1.195, p = 0.244$). Participants first show significantly more looks to masculine target items in Region 900, mean difference = 0.352 ($t(24) = 5.251, p < 0.001$), and this effect is increased in the final time region, Region 1000 mean difference = 0.515 ($t(24) = 7.893, p < 0.001$).

Appendix B—Spanish-only Stimuli

Stimuli list used for Experiment 1. English translations are provided underneath each stimulus item.

Quartet	Feminine	Feminine	Masculine	Masculine
1	calabaza pumpkin	tetera kettle	semáforo stoplight	ajo garlic
2	vaca cow	lata can	teclado keyboard	vestido dress
3	aguja needle	cuna crib	ladrillo brick	queso cheese
4	bandeja tray	taza cup	periódico newspaper	lazo ribbon
5	basura garbage	rueda wheel	hueso bone	cuchillo spoon
6	bolsa bag	jaula cage	cuaderno notebook	pañuelo handkerchief
7	cerveza beer	vela candle	cuadro painting	espejo mirror
8	tarjeta card	langosta lobster	nido nest	regalo gift
9	pirámide pyramid	torre tower	barril barrel	diamante diamond
10	cárcel jail	miel honey	limón lemon	tenedor fork
11	nube cloud	llave key	peine comb	lápiz pencil
12	flor flower	cruz cross	cinturón belt	aceite oil
13	nariz nose	leche milk	café coffee	jamón ham
14	televisión television	carne meat	avión airplane	pie foot
15	nieve snow	nuez walnut	botón button	maquillaje make-up
16	luz light	frente forehead	jardín garden	corazón heart
17	tarántula tarantula	banana banana	estéreo stereo	canguro kangaroo

18	jirafa giraffe	dinamita dynamite	dinosaurio dinosaur	hipopótamo hippopotamus
19	perla pearl	pizza pizza	pingüino penguin	helicóptero helicopter
20	calculadora calculator	cucaracha cockroach	acuario aquarium	camello camel
21	motocicleta motorcycle	ambulancia ambulance	búfalo buffalo	gorila gorilla
22	ensalada salad	cebra zebra	telescopio telescope	panda panda
23	computadora computer	bota boot	dominó domino	cocodrilo crocodile
24	hamaca hammock	trompeta trumpet	micrófono microphone	cono cone
25	cabaña cabin	patata potato	calendario calendar	insecto insect
26	pirata pirate	medalla medal	microscopio microscope	átomo atom
27	jarra pitcher	tortuga turtle	círculo circle	catálogo catalogue
28	pera pear	bicicleta bicycle	diccionario dictionary	estadio stadium
29	fruta fruit	blusa blouse	templo temple	circo circus
30	guitarra guitar	bomba bomb	aluminio aluminum	aeropuerto airport
31	pipa pipe	cortina curtain	monstruo monster	océano ocean
32	lámpara lamp	pasta pasta	disco disk	castillo castle
33	medicina medicine	tumba tombstone	piano piano	tabaco tabacco
34	planta plant	montaña mountain	plato plate	estómago stomach
35	cámara camera	rosa rose	planeta planet	banco bank
36	escuela school	botella bottle	palacio palace	teléfono telephone
37	tirita bandage	piña pineapple	boleto ticket	faro lighthouse

38	langosta	zanahoria	caramelo	pato
	lobster	carrot	candy	duck
39	cereza	mochila	horno	ajo
	cherry	backpack	oven	garlic
40	olla	mantequilla	semáforo	murciélago
	pot	butter	stoplight	bat
41	cesta	servilleta	loro	cepillo
	basket	napkin	parrot	brush
42	uña	mariposa	teclado	pino
	nail	butterfly	keyboard	pine tree
43	tarjeta	bala	pavo	lazo
	card	bullet	turkey	bow
44	lata	manzana	ladrillo	queso
	can	apple	brick	cheese
45	aguja	vaca	veneno	nido
	needle	cow	poison	nest
46	jaula	paloma	cerdo	zapato
	cage	pigeon	pig	shoe
47	almohada	toalla	burro	helado
	pillow	towel	donkey	ice cream
48	campana	alfombra	anillo	hueso
	bell	carpet	ring	bone
49	taza	bata	oso	cuchillo
	cup	robe	bear	knife
50	rueda	vela	mono	huevo
	wheel	candle	monkey	egg
51	basura	cerveza	cuaderno	pañuelo
	garbage	beer	notebook	handkerchief
52	bolsa	barba	pájaro	desayuno
	bag	beard	bird	breakfast
53	pierna	hoja	sombrero	regalo
	leg	leaf	hat	gift
54	cola	llave	edificio	gato
	tail	key	building	cat
55	iglesia	luna	perro	cuadro
	church	moon	dog	painting
56	mesa	cama	libro	dinero
	table	bed	book	money

Appendix C—Critical Target Items in Experiment 2a, Mixed NPs in Fixed Carrier Phrase

Critical pairs used in Experiment 2a. Target nouns were English nouns that shared phonological overlap but with Spanish translation equivalents that are different gender. Spanish translations are provided underneath each critical item.

Pairs	Feminine Cohort	Masculine Cohort
1	stapler	stadium
	grapadora	estadio
2	backpack	bank
	mochila	banco
3	bag	bat
	bolsa	murciélago
4	beach	beak
	playa	pico
5	braid	brain
	trensa	cerebro
6	buckle	bucket
	hebilla	cubo
7	butter	bumper
	mantequilla	parachoques
8	cabin	cabinet
	cabaña	gabinete
9	cake	cane
	torta	bastón
10	calculator	cactus
	calculadora	cacto
11	camera	castle
	cámara	castillo
12	can	cabbage
	lata	col
13	candle	candy
	vela	caramelo
14	cape	cable
	capa	cable
15	carrot	cannon
	zanahoria	cañón
16	chalkboard	chocolate
	pizarra	chocolate

17	cloud	clown
	nube	payaso
18	curtain	curler
	cortina	rulo
19	dynamite	dinosaur
	dinamita	dinosaurio
20	fireplace	firetruck
	chimenea	camión de bomberos
21	garbage	garden
	basura	jardín
22	gargoyle	garlic
	gárgola	ajo
23	green bean	greenhouse
	judía verde	invernadero
24	hammock	hammer
	hamaca	martillo
25	label	ladle
	etiqueta	cucharón
26	lid	lip
	tapa	labio
27	magazine	magnet
	revista	imán
28	marble	market
	canica	mercado
29	mask	mattress
	máscara	colchón
30	mermaid	mercury
	sirena	mercurio
31	muffin	muffler
	magdalena	tubo de escape
32	mug	muscle
	taza	músculo
33	mustard	mustache
	mostaza	bigote
34	net	nest
	red	nido
35	paintbrush	paper
	brocha	papel
36	pineapple	pine tree
	piña	pino

37	plant	planet
	planta	planeta
38	plum	plug
	ciruela	enchufe
39	pot	pocket
	olla	bolsillo
40	ribbon	river
	cinta	río
41	rocking chair	rocket
	silla mecedora	cohete
42	root	roof
	raíz	techo
43	sausage	saw
	salchicha	serrucho
44	seagull	seahorse
	gaviota	cabillito de mar
45	staircase	stereo
	escalera	estéreo
46	strawberry	straw hat
	fresa	sombrero de paja
47	surfboard	circus
	tabla de surf	circo
48	tray	train
	bandeja	tren
49	turtle	turkey
	tortuga	pavo
50	window	windmill
	ventana	molino
51	sheet	shield
	sábana	escudo
52	puppet	puzzle
	marioneta	rompecabezas
53	pigeon	pig
	paloma	cerdo
54	pork chop	porcupine
	chuleta	puercoespín
55	cracker	crab
	galleta	cangrejo
56	dollhouse	dolphin
	casita de muñecas	delfín

57	bee	beetle
	abeja	escarabajo
58	shell	shelf
	concha	estante
59	trumpet	trombone
	trompeta	trombón
60	vein	vase
	vena	florero

Appendix D—Target Stimuli in Experiment 2b, Intra-sentential Mixed NPs

Two target items were embedded in the experimental sentence frames. The stimuli are listed: a. feminine translation equivalent and b. masculine translation equivalent. Each target item was paired with either its different gender phonological competitor or with a different gender neutral distractor. Target items used are a subset of the stimuli listed in Appendix B.

Translations for sentential frames are provided underneath target stimuli.

1. The man dijo que el/la _____ was in the kitchen
“The man said that the _____ was in the kitchen”
 - a. gargoyle
 - b. garlic
2. The two children colorearon juntos el/la _____ in their coloring book
“The two children together colored the _____ in their coloring book”
 - a. braid
 - b. brain
3. The girl in the white dress está mirando el/la _____ with interest
“The girl in the white dress is looking at the _____ with interest”
 - a. bee
 - b. beetle
4. The boy waited mientras su papá fue a buscar el/la _____ in the kitchen
“The boy waited while his father went to find the _____ in the kitchen”
 - a. sausage
 - b. saw
5. The teacher le pidió al niño que dibujara el/la _____ in his notebook
“The teacher asked the boy to draw the _____ in his notebook”
 - a. beach
 - b. beak
6. The artist está pintando el/la _____ for his new exhibition
“The artist is painting the _____ for his new exhibition”
 - a. cake
 - b. cane
7. The girl está pintando el/la _____ for her art class
“The girl is painting the _____ for her art class”
 - a. greenbean
 - b. greenhouse

8. The young girl le dijo a su mamá que había dibujado el/la _____ at school
“The young girl told her mother that she had drawn the _____ at school”
a. lid
b. lip
9. All of the scientists querían ir a ver el/la _____ up close
“All of the scientists wanted to go see the _____ up close”
a. pot
b. pocket
10. The kids encontraron el/la _____ while they were cleaning their room
“The kids found the _____ while they were cleaning their room”
a. candle
b. candy
11. The art student mostró el/la _____ that she drew yesterday in school
“The art student showed the _____ that she drew yesterday in school”
a. dynamite
b. dinosaur
12. The museum security guard caught la niña tocando el/la _____ in the exhibition hall
“The museum security guard caught the girl touching the _____ in the exhibition hall”
a. mermaid
b. mercury
13. The young man no quiso mostrar el/la _____ to his neighbor
“The young man did not want to show the _____ to his neighbor”
a. cabin
b. cabinet
14. The husband le dijo a su esposa que necesitaba el/la _____ for the auction
“The husband told his wife that he needed the _____ for the auction”
a. trumpet
b. trombone
15. The daughter estaba dibujando el/la _____ while her mother was talking on the phone
“The daughter was drawing the _____ while her mother was talking on the phone”
a. cracker
b. crab
16. The girl was sitting en la sala cuando vio el/la _____ on TV
“The girl was sitting in the room when she saw the _____ on TV”
a. buckle
b. bucket

17. The boy le pidió a su madre que fotografiara el/la _____ for the website
“The boy asked his mother to take a picture of the _____ for the website”
a. stapler
b. stadium
18. The high school student señaló el/la _____ in the hall
“The high school student point to the _____ in the hall”
a. mustard
b. mustache
19. The boy read un artículo sobre el/la _____ in the magazine that the teacher gave him
“The boy read an article about the _____ in the magazine that the teacher gave him”
a. plum
b. plug
20. The girl though que alguien perdió el/la _____ in the field
“The girl thought that someone had lost the _____ in the field”
a. muffin
b. muffler
21. The children sacaron el/la _____ that was inside the box
“The children took out the _____ that was inside the box”
a. puppet
b. puzzle
22. The clown jugaba con el/la _____ during the circus act
“The clown played with the _____ during the circus act”
a. paintbrush
b. paper
23. My friends piensan que el/la _____ is a bad birthday gift
“My friends think that the _____ is a bad birthday gift”
a. bag
b. bat
24. No one noticed que el hombre escondió el/la _____ behind the tree
“No one noticed that the man hid the _____ behind the tree”
a. mask
b. mattress
25. The man from across the street le está mostrando el/la _____ to his girlfriend
“The man from across the street is showing the _____ to his girlfriend”
a. mug
b. muscle

26. The nurse le dijo a su esposo que buscara el/la _____ during his free time
“The nurse told her husband to look for the _____ during his free time”
a. marble
b. market
27. The researchers estaban mostrando el/la _____ to the scientific committee
“The researchers were showing the _____ to the scientific committee”
a. plant
b. planet
28. One of his brothers encontró el/la _____ in the field
“One of his brothers found the _____ in the field”
a. magazine
b. magnet
29. The girl le pidió a su papá que fuera a fotografiar el/la _____ for her collage
“The girl asked her father to go take a picture of the _____ for her collage”
a. strawberry
b. straw hat
30. The kindergarten kids no quería pintar el/la _____ during the break
“The kindergarten kids did not want to paint the _____ during the break”
a. fireplace
b. firetruck